REMARKS/ARGUMENTS

Objected to Claims 3 and 20 have been rewritten in independent form including all of the limitations of the base claim and any intervening claims and are therefore allowable. Objected to Claims 4-14 and 21-34 are now allowable since they depend directly or indirectly from allowable claims 3 or 20. Accordingly, claims 3-14 and 20-34 stand allowable.

1) Claims 1, 2, 18, 19, 35 and 36 stand rejected under 35 U.S.C. 102(e) as being anticipated by, U.S. Patent 5,697,078 to Peterson et al. Applicants respectfully traverse this rejection, as set forth below.

In order that the rejection of any of Claims 1, 2, 18, 19, 35 and 36 be sustainable (under 35 U.S.C. 102(e)), it is fundamental that "each and every element as set forth in the claim be found, either expressly or inherently described, in a single prior art reference." Verdegall Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), where the court states, "The identical invention must be shown in as complete detail as is contained in the ... claim".

Furthermore, "all words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Independent Claim 1 requires and positively recites, a method of downconverting a first periodic voltage waveform into a second periodic voltage waveform, comprising: "obtaining from the first voltage waveform **a plurality of temporally distinct samples respectively indicative of areas under corresponding**

half-cycles of the first voltage waveform", "**combining the samples to produce the second voltage waveform**" and "**manipulating the samples to implement a filtering operation** such that the second voltage waveform represents a downconverted, filtered version of the first voltage waveform".

Independent Claim 19 requires and positively recites, an apparatus for downconverting a first periodic voltage waveform into a second periodic voltage waveform, comprising: "an input for receiving the first voltage waveform", "a sampler coupled to said input for **obtaining from the first voltage waveform a plurality of temporally distinct samples respectively indicative of areas under corresponding half-cycles of the first voltage waveform**", "a combiner coupled to said sampler for **combining the samples to produce the second voltage waveform**" and "at least one of said sampler and said combiner operable for **manipulating the samples to implement a filtering operation** such that the second voltage waveform represents a downconverted, filtered version of the first voltage waveform".

Independent Claim 35 requires and positively recites, a communication receiving apparatus, comprising: "an input for receiving a communication signal formed as a first periodic voltage waveform", "a mixer coupled to said input for downconverting the first periodic voltage waveform into a second periodic voltage waveform, including a sampler coupled to said input for **obtaining from the first voltage waveform a plurality of temporally distinct samples respectively indicative of areas under corresponding half-cycles of the first voltage waveform**, a combiner coupled to said sampler for **combining the samples to produce the second voltage waveform**, and at least one of said sampler and said combiner operable for **manipulating the samples to implement a filtering operation** such that the second voltage waveform represents a downconverted, filtered version of the first voltage

waveform" and "a signal processing portion coupled to said mixer for receiving and processing the second voltage waveform".

In contrast, Peterson et al. discloses a wideband channel sniffer for monitoring channel use in a wireless communication system. Assertions of the Examiner notwithstanding, Peterson fails to teach or suggest, "obtaining from the first voltage waveform **a plurality of temporally distinct samples respectively indicative of areas under corresponding half-cycles of the first voltage waveform**", as required by Claims 1, 19 and 35. While Peterson does mention sampling, there is teaching to suggest that such sampling is in regards to "**corresponding half-cycles of the first voltage waveform**", as suggested by the Examiner. There is simply no support in Peterson (col. 1, line 53-col. 2, line 12, col. 4, lines 1-48, col. 6, lines 22-31) as suggested by the Examiner. If the Examiner disagrees, Applicants respectfully request the Examiner to specifically point out the above high-lighted requirement in Peterson.

Further, since Peterson fails to teach or suggest "obtaining from the first voltage waveform **a plurality of temporally distinct samples respectively indicative of areas under corresponding half-cycles of the first voltage waveform**", as required by Claims 1, 19 and 35, it similarly fails to teach or suggest, "a combiner coupled to said sampler for **combining the samples to produce the second voltage waveform**", as further required by Claims 1, 19 and 35. There is simply no support in Peterson (col. 1, line 53-col. 2, line 12, col. 4, lines 1-48, col. 6, lines 22-31) as suggested by the Examiner. If the Examiner disagrees, Applicants respectfully request the Examiner to specifically point out the above high-lighted requirement in Peterson.

Morever, since Peterson fails to teach or suggest "obtaining from the first voltage waveform **a plurality of temporally distinct samples respectively indicative of areas under corresponding half-cycles of the first voltage waveform**", and "a

combiner coupled to said sampler for **combining the samples to produce the second voltage waveform**", as further required by Claims 1, 19 and 35, it fails to teach or suggest the additional limitation, "**manipulating the samples to implement a filtering operation**", as further required by Claims 1, 19 and 35. There is simply no support in Peterson (col. 1, line 53-col. 2, line 12, col. 4, lines 1-48, col. 6, lines 22-31) as suggested by the Examiner. If the Examiner disagrees, Applicants respectfully request the Examiner to specifically point out the above high-lighted requirement in Peterson. Accordingly, the 35 U.S.C. 102(e) rejections of Claims 1, 19 and 35 is overcome.

Claims 2, 18 and 36 stand allowable as depending from allowable claims and including further limitations not taught or suggested by the references of record.

Claim 2 further defines the method of Claim 1, wherein said obtaining step includes transforming the first voltage waveform into a corresponding current waveform, and integrating each half-cycle of the current waveform. Claim 2 is allowable for the same reasons as set forth in support of the allowance of Claim 1. Moreover, Peterson does not teach or suggest on col. 6, lines 22-31 that the first voltage waveform is transformed into a corresponding "current" waveform.

Claim 18 further defines the method of Claim 1, wherein the first voltage waveform is an RF waveform. Claim 18 is allowable for the same reasons as set forth in support of the allowance of Claim 1.

Claim 36 further defines the apparatus of Claim 35, wherein said communication signal is an RF communication signal. Claim 36 is allowable for the same reasons as set forth in support of the allowance of Claim 35.

2) Claims 15-17 and 37-39 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson. Applicants respectfully traverse this rejection, as set forth below.

Regarding 35 U.S.C. 103 rejections, in proceedings before the Patent and Trademark Office, "the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art". In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (citing In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). "The Examiner can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references", In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992)(citing In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988)(citing In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)).

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest ALL the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Furthermore, "all words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Claim 15 further defines the method of Claim 1, wherein said filtering operation includes one of FIR and IIR filtering. Applicants have previously discussed the deficiencies of the Peterson reference. Accordingly, Claim 15 is allowable for the same reasons as Claim 1. Further, even if, arguendo, FIR and IIR filtering are known in the art generically, the Examiner has provided no teaching or suggestion from the prior art that would motivate one having ordinary skill in the art at the time of the invention to combine such filtering with the invention of Claim 1.

Claim 16 further defines the method of Claim 1, wherein said filtering operation includes one of fractional coefficient filtering and differential coefficient filtering. Applicants have previously discussed the deficiencies of the Peterson reference. Accordingly, Claim 16 is allowable for the same reasons as Claim 1. Further, even if, arguendo, fractional coefficient filtering and differential coefficient filtering are known in the art generically, the Examiner has provided no teaching or suggestion from the prior art that would motivate one having ordinary skill in the art at the time of the invention to combine such filtering with the invention of Claim 1.

Claim 17 further defines the method of Claim 1, wherein said filtering operation includes triangular coefficient filtering. Applicants have previously discussed the deficiencies of the Peterson reference. Accordingly, Claim 17 is allowable for the same reasons as Claim 1. Further, even if, arguendo, triangular coefficient filtering is known in the art generically, the Examiner has provided no teaching or suggestion from the prior art that would motivate one having ordinary skill in the art at the time of the invention to combine such filtering with the invention of Claim 1.

Claim 37 further defines the apparatus of Claim 35, wherein said filtering operation includes one of FIR and IIR filtering. Applicants have previously discussed the deficiencies of the Peterson reference. Accordingly, Claim 37 is allowable for the same reasons as Claim 35. Further, even if, arguendo, FIR and IIR filtering are known in the art generically, the Examiner has provided no teaching or suggestion from the prior art that would motivate one having ordinary skill in the art at the time of the invention to combine such filtering with the invention of Claim 35.

Claim 38 further defines the apparatus of Claim 35, wherein said filtering operation includes one of fractional coefficient filtering and differential coefficient filtering. Applicants have previously discussed the deficiencies of the Peterson reference. Accordingly, Claim 38 is allowable for the same reasons as Claim 35. Further, even if, arguendo, fractional coefficient filtering and differential coefficient filtering are known in the art generically, the Examiner has provided no teaching or suggestion from the prior art that would motivate one having ordinary skill in the art at the time of the invention to combine such filtering with the invention of Claim 35.

Claim 39 further defines the apparatus of Claim 35, wherein said filtering operation includes triangular coefficient filtering. Applicants have previously discussed the deficiencies of the Peterson reference. Accordingly, Claim 39 is allowable for the same reasons as Claim 35. Further, even if, arguendo, triangular coefficient filtering is known in the art generically, the Examiner has provided no teaching or suggestion from the prior art that would motivate one having ordinary skill in the art at the time of the invention to combine such filtering with the invention of Claim 35.

Objected to Claims 3-14 and 20-34 have been amended to be allowable. Claims 1, 2, 15-19 and 35-39 stand allowable over the cited art. Applicants respectfully request allowance of the application at the earliest possible date.

Respectfully submitted,

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